

WASTE ANALYSIS DECISION

___ Initial ___ Renewal

APPROVAL SIGNATURES

Evonne M. Masello
Laboratory - Print
EVONNE M. MASELLO

Evonne M. Masello
Sign

10/31/11
Date

Vincent W. Davis
Safety - Print
Environmental - Print
MARK JESSE DAVIS

Vincent W. Davis
Sign

10/31/11
Date

Mark Jesse Davis
Sign

10/31/11
Date

Operations - Print

COMMENTS

Type Text

___ Conditional Acceptance

Conditions for acceptance:

W343132

WASTE ANALYSIS RESULTS

Identification	Measured Value	Possible Waste Codes	Total Constituent Analysis	TCLP
A. ANIONS				
Bromide, PERCENT	<0.1			
Chloride, PERCENT	<0.1			
Fluoride, PERCENT	<0.1			
Iodine, PERCENT	<0.1			
Sulfur, PERCENT	<0.1			
Sulfides, PPM	<20			
Cyanides, PPM	<20			
B. METALS				
			SOLID Mg/Kg	LIQUID Mg/l
Antimony, PPM	446			
Arsenic, PPM	181	D004 ARSENIC	100	5.0
Barium, PPM	<50	D005 BARIUM	2000	100
Beryllium, PPM	<5			
Cadmium, PPM	<1	D006 CADMIUM	20	1.0
Calcium, PPM	1938			
Chromium, PPM	18	D007 CHROMIUM	100	5.0
Copper, PPM	<50			
Lead, PPM	<5	D008 LEAD	100	5.0
Lithium, PPM	<50			
Mercury, PPM	0.63	D009 MERCURY	4	0.2
Nickel, PPM	477			
Phosphorous, PPM	352			
Potassium, PPM	270			
Selenium, PPM	<1	D010 SELENIUM	20	1.0
Silver, PPM	<5	D011 SILVER	100	5.0
Sodium, PPM	2482			
Thallium, PPM	<10			
Zinc, PPM	<50			
C. PHYSICAL PROPERTIES				
Flashpoint, DEGREES F	NA			
Btu/lb, BTU/LB	5800			
Water, PERCENT	7			
Viscosity, CENTIPOISE	NA			
Ash, PERCENT	74			
Density, G/ML	NA			
pH, STD. UNITS	NA			
Settleable Solids, PERCENT	NA			
PCB Total, PPM	NA			
Paint Filter	PAS			
D. REACTIVITY				
Water	NO			
Acid	NO			
Alkali	NO			
Oxidizers, PPM	<100			
E. FREONS				
Dichlorodifluoromethane				
Trichlorofluoromethane				
Bromoform				

GENERATOR INFORMATION

Name: SUNOCO INC
Address (site): 100 GREEN STREET MARCUS HOOK, PA 19061 UNITED STATES
Address (mail): Same
US EPA ID: PAD980550594
Regulatory Status: LARGE QUANTITY
Technical Contact: RON ROSENDORN **Phone:** (610)859-6297
Short Name:

WASTESTREAM INFORMATION - GENERAL

Common Name: CLARIFIED SLURRY OIL STORAGE TANK BOTTOM
Waste Class: 000 - GENERAL STORAGE
Generating Process: CLEANING OF CLARIFIED SLURRY OIL STORAGE TANK
EPA Source Code: G14 - REMOVAL OF TANK SLUDGE, SEDIMENTS OR SLAG
EPA Form Code: W409 - OTHER ORGANIC SOLIDS (SPECIFY IN COMMENTS)
Physical State @ 70F: SOLID
Odor: MILD/PETROLEUM
Estimated Annual Volume: 1000
Conditional Approval?: N

MANAGEMENT SYSTEM ASSIGNMENTS

<u>Product Code - Desc</u>	<u>Put Away Area</u>	<u>Cont Type</u>
8034 SOLIDS REFINERY BULK	A GENERAL STORAGE	CM, DT

EPA HAZARD CODES

K170

SAFETY INFORMATION

<u>HMIS Information</u>	<u>Description</u>
HEALTH	2 - MODERATE HAZARD
FLAMMABLE	0 - MINIMAL HAZARD
REACTIVE	0 - MINIMAL HAZARD
PPE	J2 - OV SUPER CART-NEOPRENE
* = Carcinogen	
@ = Water Reactive	

COMMENTS
Type Text

ER EMERGENCY RESPONSE TO A HAZARDOUS SOLID. PPE = K6.

PE TYVEK SUIT.

ER - EMERGENCY RESPONSE

PE - PROTECTIVE EQUIPMENT

TRANSPORTATION INFORMATION
Shipping Description: RQ,NA3077,HAZARDOUS WASTE, SOLID, N.O.S.,PGIII,(CLARIFIED OILS),(K170),ERG#171

SURVEY RESPONSES
PHYSICAL AND CHEMICAL PROPERTIES.

<u>Question</u>	<u>Reply</u>	<u>Question</u>	<u>Reply</u>
Flash Point	>=200	Boiling Point	NA
BTU/LB, range, low value	3000	BTU/LB, range, high value	8000
PH, range, low value	3	PH, range, high value	12
Free Liquids / Fail Paint Filter Test?	NO	Will waste dump from drums?	NO
Is the waste pumpable ?	NO	Will heat improve the flow ?	NO
Debris?	YES	Is this a dust hazard ?	NO
Percent Solids	100	Percent Liquids	0

ADDITIONAL HAZARDS.

<u>Question</u>	<u>Reply</u>	<u>Question</u>	<u>Reply</u>
Aerosol	NO	Air Reactive	NO
Ammonia	NO	Asbestos	NO
Autoignitable	NO	Biological	NO
Carcinogen	NO	Chelating Agent	NO
Gas	NO	Dioxins, Furans, or pre-cursors	NO
Etiological	NO	Explosive	NO
Herbicide	NO	Infectious Agents	NO
Insecticide	NO	Lab Pack	NO
Medical	NO	Metal Fines	NO
Metal Powders	NO	Oxidizer	NO
Pathogen	NO	Pesticide	NO
Polymerizable	NO	Pyrophoric	NO
Radioactive	NO	Sanitary	NO
Sharps	NO	Shock Sensitive	NO
Spontaneously Combustible	NO	Sulfide	NO
Temperature Control Required	NO	Temperature Sensitive	NO
Water Reactive	NO		

ADDITIONAL REGULATORY INFORMATION.

<u>Question</u>	<u>Reply</u>	<u>Question</u>	<u>Reply</u>
Used Oil per 40CFR279?	NO	If Used Oil, is it mixed with Hazardous Waste?	NA
If Used Oil, Total Halogen concentration range	NA	PCBs ? (If Yes, specify range)	NO
If PCBs present, is source >50 ppm	NA	Special Handling Required?	NO
Subject to Subpart CC (40CFR 264/5.1080-1091, LQG, >26gal, >500ppmw VOC)?	NA	Subject to Benzene NESHAP controls (40CFR61.340-358) ?	NOT APPLICABLE
Generated from Coke Oven Byproduct Recovery Operations?	NO	Exemption applied to remove Haz Codes?	Used Oil
Special Waste Type	Not Applicable	Generated from Electroplating Process?	NO

NON-HAZARDOUS WASTE DETERMINATION

<u>Question</u>	<u>Reply</u>	<u>Question</u>	<u>Reply</u>
Is this a listed waste?	NA	D001 Ignitability	Not Applicable
D002 Corrosivity	Not Applicable	D003 Reactivity	Not Applicable
D004 Arsenic (Metal)	Not Applicable	D005 Barium (Metal)	Not Applicable
D006 Cadmium (Metal)	Not Applicable	D007 Chromium (Metal)	Not Applicable
D008 Lead (Metal)	Not Applicable	D009 Mercury (Metal)	Not Applicable
D010 Selenium (Metal)	Not Applicable	D011 Silver (Metal)	Not Applicable
D018 Benzene (Vol)	Not Applicable	D019 Carbon Tetrachloride (Vol)	Not Applicable
D021 Chlorobenzene (Vol)	Not Applicable	D022 Chloroform (Vol)	Not Applicable
D028 1,2-Dichloroethane (Vol)	Not Applicable	D029 1,1-Dichloroethylene (Vol)	Not Applicable
D035 Methyl Ethyl Ketone (Vol)	Not Applicable	D039 Tetrachloroethylene (Vol)	Not Applicable
D040 Trichloroethylene (Vol)	Not Applicable	D043 Vinyl Chloride (Vol)	Not Applicable
D023 o-Cresol (S-Vol)	Not Applicable	D024 m-Cresol (S-Vol)	Not Applicable
D025 p-Cresol (S-Vol)	Not Applicable	D026 Cresol (S-Vol)	Not Applicable
D027 1,4-Dichlorobenzene (S-Vol)	Not Applicable	D030 2,4-Dinitrotoluene (S-Vol)	Not Applicable
D032 Hexachlorobenzene (S-Vol)	Not Applicable	D033 Hexachlorobutadiene (S-Vol)	Not Applicable
D034 Hexachloroethane (S-Vol)	Not Applicable	D036 Nitrobenzene (S-Vol)	Not Applicable
D037 Pentachlorophenol (S-Vol)	Not Applicable	D038 Pyridine (S-Vol)	Not Applicable
D041 2,4,5-Trichlorophenol (S-Vol)	Not Applicable	D042 2,4,6-Trichlorophenol (S-Vol)	Not Applicable
D012 Endrin (Herb/Pest)	Not Applicable	D013 Lindane (Herb/Pest)	Not Applicable
D014 Methoxychlor (Herb/Pest)	Not Applicable	D015 Toxaphene (Herb/Pest)	Not Applicable
D016 2,4-D (Herb/Pest)	Not Applicable	D017 2,4,5-TP (Silvex) (Herb/Pest)	Not Applicable
D020 Chlordane (Herb/Pest)	Not Applicable	D031 Heptachlor (Herb/Pest)	Not Applicable

WTI

<u>Question</u>	<u>Reply</u>	<u>Question</u>	<u>Reply</u>
Miscellaneous Special Waste	NO		

CHEMICAL CONSTITUENTS

Using specific chemical names, list all constituents present in the wastestream. Attach available analyses or Material Safety Data Sheets (MSDSs). Total composition must equal or exceed 100%.

TYPE - GENERATOR

<u>Constituents</u>	<u>Range</u>	<u>Units</u>	<u>CAS#</u>	<u>EHS</u>
3-METHYLCHOLANTHRENE	0 - 100	PPM	56-49-5	
7,12-DIMETHYLBENZ(A)ANTHRENE	0 - 100	PPM		
ARSENIC	0 - 161	PPM	7440-38-2	
BENZO(A)ANTHRACENE	0 - 100	PPM	56-55-3	
BENZO(A)PYRENE	0 - 100	PPM	50-32-8	
BENZO(B)FLUORANTHENE	0 - 100	PPM		
BENZO(K)FLUOROANTHENE	0 - 100	PPM		
CLARIFIED SLURRY OIL RESIDUE	10 - 40	PERCENT		
DEBRIS: PPE, GLOVES, PLASTIC, ETC.	0 - 1	PERCENT		
DIBENZ(A,H)ANTHRACENE	0 - 100	PPM	53-70-3	
FLUID CRACKING CATALYST	35 - 65	PERCENT		
FREE LIQUID RANGE	0 - 0	PERCENT		
MOISTURE (ABSORBED)	5 - 15	PERCENT		
RUST/SCALE/STEEL STEAM COILS/DECAYED PIPING	2 - 10	PERCENT		

EHS - Extremely Hazardous Substance

CAS - Chemical Abstracts Service

CERTIFICATION

I hereby certify that all information submitted herein and attached contains true, accurate and complete descriptions of this waste. Any sample submitted for analysis is representative of the waste material being offered for approval as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize a sample to be obtained from any waste shipment for purposes of recertification. I will provide advance notice if the generator status or any other information on this form changes. Waste quantity information is a best estimate, and is not used as a limitation for receipt of waste shipments or quantities in excess of these estimated amounts. I have reviewed the physical facilities, administrative practices, and operational procedures (or have directed the completion of such a review) and based on this review do willingly make this certification.

Signature (Print) Ron RosendornSignature (Sign) Signature on file Date 10-21-11

Company

Title



HERITAGE ENVIRONMENTAL SERVICES, LLC

WASTESTREAM SURVEY FORM

(877)436-8778

www.heritage-enviro.com

Please review instructions before completing this form.

Large Use Only	
Quote #:	WS#: 128991
Business Type: Repeatable: <input type="checkbox"/> Non-Repeatable: <input type="checkbox"/>	
Product Code:	Price:

Preferred TSD Location *:	Charlotte, NC <input type="checkbox"/>	Coolidge, AZ <input type="checkbox"/>	Indianapolis, IN <input type="checkbox"/>	Kansas City, MO <input type="checkbox"/>	Roachdale, IN: Hazardous Landfill <input type="checkbox"/> Non-Hazardous Landfill <input type="checkbox"/>	VRA/WTI <input type="checkbox"/>
Service Location *:	Albany, NY <input type="checkbox"/>	Blaine, MN <input type="checkbox"/>	East Liverpool, OH <input checked="" type="checkbox"/>	Hammond, IN <input type="checkbox"/>	Lemont, IL <input type="checkbox"/>	
	Louisville, KY <input type="checkbox"/>	Signal Hill, CA <input type="checkbox"/>	St. Louis, MO <input type="checkbox"/>	Toledo, OH <input type="checkbox"/>	Tulsa, OK <input type="checkbox"/>	

1. GENERATOR INFORMATION (Heritage#) *	2. BILLING INFORMATION (Heritage #) *
Generator Name Sunoco, Inc.	Customer Name Same
Address 100 Green Street	Address
City, State, Zip Marcus Hook, PA 19061	City, State, Zip
Tech. Contact Name Ron Rosendorn	Contact Name
Phone 610-859-6297 Fax 866-716-5154	Phone Fax
24 Hour Emergency Number 800-424-9300	E-mail Address
E-mail Address rrosendorn@sunoco.com	3. MANIFEST MAIL ADDRESS (If different from generator)
US EPA ID Number PAD980550594	Contact Name Same
State ID Numbers N/A in PA	Company Name
Status LQG <input checked="" type="checkbox"/> SQG <input type="checkbox"/> CESQG <input type="checkbox"/> Non-hazardous <input type="checkbox"/>	Address
	City, State, Zip

4. Generator SIC Code 2911	If 3312, do you perform Coke Oven Byproduct Recovery Operations? Yes <input type="checkbox"/> No <input type="checkbox"/>	If 28_ , 2911, 3312, or 4953, what is the Total Annual Benzene (TAB) in Megagrams/year? Greater than 10
5. Common Name Clarified Slurry Oil Storage Tank Bottom Solids		
6. Process Generating Waste Cleaning of clarified slurry oil storage tank		
7. DOT Description * (if available) RQ Hazardous Waste, Solid, n.o.s. (K170)		
8. Identify US EPA waste codes	K170	
9. If D001-D043, are any Underlying Hazardous Constituents (UHCs) present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA <input type="checkbox"/> If yes, list in Section 13.		
10. If F001-F005, or F039, list the F-listed hazardous constituents in Section 13.		
11. US EPA Form Code *	W409	US EPA Source Code * G14
12. Identify state waste codes	N/A in PA	

13. Waste Composition: Using specific chemical names and/or descriptions of waste composition, list all constituents present in the wastestream, and identify those that are underlying hazardous constituents (UHCs), or F001-F005/F039 hazardous constituents. Attach available analysis or MSDSs. Total composition must equal or exceed 100%.

Constituents	Range	Units	UHC?	F-Listed?
Fluid cracking catalyst	35-65	% wt	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
Clarified slurry oil residue	10-40	% wt	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
Moisture (absorbed)	5-15	% wt	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
Rust/scale/steel steam coil debris (small pieces of decayed piping)/	2-10	% wt	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
Minor other debris - ppe, gloves, plastic, etc.	0-1	% wt	Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
			Yes <input type="checkbox"/>	Yes <input type="checkbox"/>
			Yes <input type="checkbox"/>	Yes <input type="checkbox"/>

14. Color Black/Brown	Appearance Tar-like	Odor Mild petroleum
15. 15a. Chemical Properties		
Flash < 73 <input type="checkbox"/>	BTU/lb < 2,000 <input type="checkbox"/>	Solid <input checked="" type="checkbox"/>
Point (F°) < 100 <input type="checkbox"/>	2,000-6,000 <input checked="" type="checkbox"/>	Liquid <input type="checkbox"/>
100-140 <input type="checkbox"/>	6,000-10,000 <input type="checkbox"/>	Sludge <input type="checkbox"/>
141-200 <input type="checkbox"/>	> 10,000 <input type="checkbox"/>	Semi-solid <input type="checkbox"/>
> 200 <input checked="" type="checkbox"/>		Powder <input type="checkbox"/>
		Gas <input type="checkbox"/>
Boiling < 100 <input type="checkbox"/>	pH 4-10	% Solids 100
Point (F°) > 100 <input type="checkbox"/>	Range	% Liquids 0
Note: * These sections will be completed by Heritage if left blank.		

Common Name (same as Item #5): Clarified Slurry Oil Storage Tank Bottom Solids

16. Check all that apply. Marking any of these may require additional documentation or follow-up information.			
16a. Aerosols <input type="checkbox"/> Air Reactive <input type="checkbox"/> Ammonia <input type="checkbox"/> Asbestos <input type="checkbox"/> Autoignitable <input type="checkbox"/> Biological <input type="checkbox"/> Carcinogen <input checked="" type="checkbox"/> Chelating Agent <input type="checkbox"/> Compressed Gas <input type="checkbox"/> Dioxins <input type="checkbox"/> Etiological <input type="checkbox"/> Explosive <input type="checkbox"/> Herbicide <input type="checkbox"/> Infectious <input type="checkbox"/> Insecticide <input type="checkbox"/> Lab Pack <input type="checkbox"/> Medical <input type="checkbox"/> Metal Fines <input type="checkbox"/>	<input type="checkbox"/> Metal Powders <input type="checkbox"/> Oxidizer <input type="checkbox"/> Pathogen <input type="checkbox"/> Pesticide <input type="checkbox"/> Polymerizable <input type="checkbox"/> Pyrophoric <input type="checkbox"/> Radioactive <input type="checkbox"/> Sanitary <input type="checkbox"/> Shams <input type="checkbox"/> Shock Sensitive <input type="checkbox"/> Spontaneously <input type="checkbox"/> Combustible <input type="checkbox"/> Sulfide <input type="checkbox"/> Temperature <input type="checkbox"/> Control Required <input type="checkbox"/> Temperature <input type="checkbox"/> Sensitive <input type="checkbox"/> Water Reactive	16b. Used oil? (per 40 CFR 279) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Used oil mixed with hazardous waste? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Total Halogens (TX) concentration? < 1000 PPM <input checked="" type="checkbox"/> > 1000 PPM <input type="checkbox"/>	16c. PCBs? (per 40 CFR 761) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, PCB concentration? < 50 PPM <input type="checkbox"/> > 50 PPM <input type="checkbox"/> Greater than 50 PPM source? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
16d. Does this material require any special handling? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, explain: _____			
16e. Volatile Organic Compound > 500 PPM? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Subject to Subpart CC? (per 40 CFR 265.1080-1091) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		16f. Do any exclusions/exemptions apply? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, note the exclusion/exemption: _____	
16g. Generated from electroplating process? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		16h. Additional Comments: <u>Carcinogens present are polycyclic aromatic hydrocarbons. Also see attached MSDS sheets for catalyst and oil.</u>	

17. Transporter: Heritage Transport <input type="checkbox"/> Other <input checked="" type="checkbox"/> (Complete below) Transporter Name <u>Undetermined at this time</u> Address _____ City, State, Zip _____ Contact/Phone _____ US EPA ID No. _____	18. Packaging: Bulk Liquid <input type="checkbox"/> Bulk Solid <input checked="" type="checkbox"/> Cu Yd Bag/Box <input type="checkbox"/> Cylinder <input type="checkbox"/> Drum <input type="checkbox"/> Tote (Metal) <input type="checkbox"/> Tote (Poly) <input type="checkbox"/>	Size: <u>20 Y3</u>	19. Volume: <u>400/Year</u> _____/Shipment
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20. Check or List Attachments: Lab Data ☒ MSDS ☒ Cylinder Form ☐ Packing List ☐ Other (list) ☐

21. CERTIFICATION Sign and date the certification.

I hereby certify that I am an authorized agent of the generator, and warrant on behalf of the generator, that all information submitted herein and attached documentation contains true, accurate and complete descriptions of this material. Any sample submitted for analysis is representative of the material being offered for approval. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I will notify Heritage Environmental Services, LLC or Von Roll America, Inc. of any changes in generator status, any information on this form, or any information on the attachments. This certification and signature apply to this form, to all attachments checked in section 20, and to the land disposal restriction notification (LDR) generated from this information.

Bon Rosendon Bon Rosendon 10-21-11 Sunoco, Inc.
 Signature Printed Name Date Company

22. COMPLETE THIS SECTION FOR NON-HAZARDOUS MATERIAL BEING MANAGED TO A NON-HAZARDOUS PROCESS (EXAMPLE: SUBTITLE D LANDFILL or MASS-BURN)			
22a. Does this waste exhibit the chemical characterization of an oxidizer? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
22b. Is this waste a listed waste? (U, P, K, or F codes) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		22c. This waste is not characteristically hazardous for D001-D043 based on attached lab data (mark LD), attached MSDS (mark MSDS), or generator knowledge (mark GK).	
D001 (Ignitability) _____ D002 (Corrosivity) _____ D003 (Reactivity) _____ TCLP METALS D004 Arsenic _____ D005 Barium _____ D006 Cadmium _____ D007 Chromium _____ D008 Lead _____ D009 Mercury _____ D010 Selenium _____ D011 Silver _____	TCLP VOLATILES D018 Benzene _____ D019 Carbon Tetrachloride _____ D021 Chlorobenzene _____ D022 Chloroform _____ D028 1,2-Dichloroethane _____ D029 1,1-Dichloroethylene _____ D035 Methyl Ethyl Ketone _____ D039 Tetrachloroethylene _____ D040 Trichloroethylene _____ D043 Vinyl Chloride _____	TCLP SEMI-VOLATILES D023 o-Cresol _____ D024 m-Cresol _____ D025 p-Cresol _____ D026 Cresol _____ D027 1,4-Dichlorobenzene _____ D030 2,4-Dinitrotoluene _____ D032 Hexachlorobenzene _____ D033 Hexachlorobutadiene _____ D034 Hexachloroethane _____ D036 Nitrobenzene _____ D037 Pentachlorophenol _____	D038 Pyridine _____ D041 2,4,5-Trichlorophenol _____ D042 2,4,6-Trichlorophenol _____ HERBICIDES & PESTICIDES D012 Endrin _____ D013 Lindane _____ D014 Methoxychlor _____ D015 Toxaphene _____ D016 2,4-D _____ D017 2,4,5-TP (Silvex) _____ D020 Chlordane _____ D031 Heptachlor _____

Auteri, Jill

From: Higgins, John
Sent: Friday, October 21, 2011 10:52 AM
To: WTI Wastestream Setup
Subject: FW: Sunoco Marcus Hook K170 Tank Bottoms Profile
Attachments: CSO and FCC Catalyst for K170 waste.pdf; 1269018-Marcus Hook Sampling 09-29-2011 17-45-00.pdf; HES Waste Profile - CSO Tank Bottoms K170 signed.pdf

Thank You

John (JT) Higgins

Heritage-WTI
Customer Coordinator
Ph: (330) 386-2145
Toll Free: 1-800-810-9983
Fax: 330-386-2167
jhiggins@heritage-wti.com

From: ROSENDORN, RONALD M [mailto:RMRosendorn@sunocoinc.com]
Sent: Friday, October 21, 2011 10:35 AM
To: Higgins, John
Cc: Leonards, Mary Linn
Subject: Sunoco Marcus Hook K170 Tank Bottoms Profile

John,

Attached is a new waste profile, lab analysis and msds sheets for K170 tank bottoms solids. Sunoco is seeking approval for this material and are hopeful that this fits in with the \$390/ton pricing for bulk solids. We expect ~ 1250 tons (from Tank 5) over the next couple of months. There is another larger K170 tank (Tank 11) to be cleaned after this one @ ~ 3000 tons. Anyway, I will be getting a sample to Mary Linn next week. Thanks as always for your help.

Ron

Ron Rosendorn
Senior Environmental Engineer
Sunoco Marcus Hook Refinery
Tel. 610-859-6297
Fax. 866-716-5154
Cell. 610-256-5643
Red Team

10/21/2011

NEW WASTESTREAM INFO SHEET

Waste Stream #

128991-3

WASTE CLASS SOURCE CODE FORM CODE		000 G14 W409		Benzene NESHA? <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> NS <input type="radio"/> WA <input type="radio"/> NA		Sample % <u>10</u>	
Benzene NESHA form? <input type="radio"/> Y <input type="radio"/> N		LDR Req? <input checked="" type="radio"/> PR <input type="radio"/> OT <input type="radio"/> D <input type="radio"/> NA <input type="radio"/> IP		LDR WW: <input type="radio"/> Y <input checked="" type="radio"/> N <input type="radio"/> NA		LDR Cert: <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	
Subcategory: <u>-1</u>		UTS Code: <u>-1</u>		HMIS Information		Health <u>2</u>	
Con Ranges:		Flammable <u>0</u>		Reactive <u>0</u>		PPE <u>-32</u>	
Aluminum		Chlorine		Nitrogen			
Antimony		Chromium		Phosphorus			
Arsenic		Fluorine		Potassium			
Ash		Iodine		Selenium			
Barium		Lead		Silicon			
Beryllium		Lithium		Silver			
Bromine		Magnesium		Sodium			
Cadmium		Mercury		Sulfur			
Calcium		Nickel		Thallium			
Emergency Response Info: <u>Solid. PPE = R6 - ER to a hazardous</u>							
Processing Instructions:				Agency Comments:			
<u>Normal Processing</u>				Dilution Rule:			
This material needs packed in _____ lb charges and will be processed through the front wall of the kiln.				This material is not prohibited from combustion as per 40 CFR 268.3 because:			
This material will be processed through the front wall of the kiln and cannot be processed through the bulk solids storage area.				_____ it contains hazardous organic constituents or cyanide above the treatment standard in 268.48			
This material will be processed through Direct Drum Pumpout				_____ it consists of organic debris			
This material will be processed through Direct Tanker (South/East).				_____ it has a BTU value of greater than or equal to 5000 BTU/LB			
This material will be processed through the Skip Hoist and cannot be processed through the bulk solid storage area.				_____ it was co-generated with a waste for which combustion is a required method of treatment			
This material needs packaged in 5 gallon pails filled to half the volume or a maximum of five 1-gallon containers per overpack. This will be processed through the front wall of the kiln.				_____ it is subject to Federal and/or State requirements necessitating reduction of organics			
The material will be processed through the Third-Party Program.				_____ it contains greater than 1% of TOC			
The material will be processed through the Fuels Program.				Conditional Approval:			
Heritage-WTI Repack? <input checked="" type="radio"/> Y <input type="radio"/> N				Heritage-WTI is requesting conditional approval to collect the Pre-Acceptance when the first shipment is received at the facility.			
Temperature Controlled Information: The kiln must be operational to receive this material. This material requires special scheduling.				3 rd Party Pre-acceptance Pre-acceptance sample to be taken when 1 st shipment arrives at the facility. 3 rd Party Waste Transfer Only			
Label Message: DNO NSR DNI DO NOT INCIN				Internal Comments: 10-day sampling? <input type="radio"/> Y <input type="radio"/> N			
MSW? <input checked="" type="radio"/> Y <input type="radio"/> N		BTU 1 2 3 4 <u>use quality</u>		Prod / Proc Codes: <u>8037 2281</u>			
1A 1B 1C 1D 1E		Automatic Hold: <input type="radio"/> Y <input type="radio"/> N					
2A 2B 2C		Message:					
3A 3B							

Waste Stream No.: _____

[illegible]



MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: CLARIFIED SLURRY OIL

Manufacturer Information:

Sunoco, Inc. (R&M)
1735 Market Street LL

Philadelphia, Pennsylvania, 19103-7583

Product Use:

Refinery stream

Emergency Phone Numbers:

Chemtrec (800) 424-9300
Sunoco Inc. (800) 964-8861

Information:

Product Safety Information (888) 567-3066

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Amount (Vol%)
CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4	90 - 95
POLYNUCLEAR AROMATIC HYDROCARBONS	RR-00450-2	5 - 10
SULFUR	7704-34-9	0.7 - 1.1

EXPOSURE GUIDELINES (SEE SECTION 15 FOR ADDITIONAL EXPOSURE LIMITS)

	CAS No.	Governing Body	Exposure Limits		
CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4	Sunoco	TWA	0.2	mg/m3
POLYNUCLEAR AROMATIC HYDROCARBONS	RR-00450-2	Sunoco	TWA	0.2	mg/m3

3. HAZARDS IDENTIFICATION

• **EMERGENCY OVERVIEW**

Danger! May release colorless Hydrogen Sulfide Gas that can be harmful or fatal if inhaled. The Hydrogen Sulfide "rotten-egg" odor is not reliable as a warning because the gas can rapidly cause a loss of the sense of smell. May cause nervous system effects. May cause skin, eye, throat and respiratory tract irritation and damage. Harmful or fatal if swallowed. Pulmonary aspiration hazard. While ingesting or vomiting, may enter lungs and produce damage. May cause respiratory tract irritation. May cause skin irritation. May be absorbed through the skin in harmful amounts. May produce toxic reproductive, liver, thymus, bone marrow and blood (anemia) effects. Cancer hazard.

Hazards Ratings:

Key: 0 = least, 1 = slight, 2 = moderate, 3 = high, 4 = extreme

	<u>Health</u>	<u>Fire</u>	<u>Reactivity</u>	<u>PPI</u>
NFPA	2	2	0	
HMIS	2	2	0	x

• POTENTIAL HEALTH EFFECTS

▪ PRE-EXISTING MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

The following diseases or disorders may be aggravated by exposure to this product: skin, eye, liver, respiratory system, lung (asthma-like conditions),

▪ INHALATION

Hydrogen sulfide can interfere with the ability to use oxygen and overexposure may cause a rapid loss of the sense of smell, drowsiness, dizziness, nausea, headaches, confusion, weakness, tremors, irregular heartbeats, paralysis, loss of memory, brain damage, sudden collapse and even death. May produce increased sensitivity to light, tearing, blurred vision and eye damage. May produce runny nose, coughing, shortness of breath, fluid in the lungs and lung damage. (See section 15 for additional information). Excessive exposure to mists or vapors generated by heat may cause irritation to eyes, nose, throat, lungs and respiratory tract. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness and even death). Prolonged and repeated exposure may cause chronic, adverse systemic effects.

LC50 (mg/l): no data

LC50 (mg/m3): no data

LC50 (ppm): no data

▪ SKIN

Moderately irritating to the skin. May cause light sensitivity which appears as a skin rash when exposed to sunlight. May be absorbed through the skin in harmful amounts. May produce toxic reproductive, liver, thymus, bone marrow and blood (anemia) effects. May produce skin tumors upon prolonged and repeated contact in the absence of good personal hygiene. Studies have shown that thorough removal of this oil from the skin can prevent these toxic effects. See Section 15 for additional information.

Draize Skin Score: no data out of 8.0

LD50 (mg/kg): no data

▪ EYES

Mildly irritating to the eyes.

▪ INGESTION

Harmful or fatal if swallowed. Pulmonary aspiration hazard. While ingesting or vomiting, may enter lungs and produce damage. May produce toxic reproductive, liver, thymus, bone marrow and blood (anemia) effects. See Section 15 for additional information.

LD50 (g/kg): no data

4. FIRST AID MEASURES

• INHALATION

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Get immediate medical attention.

• SKIN

Remove contaminated clothing. Wash with soap and water for 20 minutes. Get medical attention if irritation develops or persists. Wash clothing before reuse. Destroy contaminated shoes and other leather products. Injection injuries may not appear serious at first but within a few hours, without proper treatment, the area will become swollen, discolored and extremely painful. See Section 15 for additional information.

• EYES

Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. If eye irritation persists, obtain medical treatment.

• INGESTION

Get medical attention immediately.

5. FIRE FIGHTING MEASURES

- **EXTINGUISHING MEDIA**

The following media may be used to extinguish a fire involving this material: Water spray; Regular foam; Dry chemical; Carbon dioxide;

- **FIRE FIGHTING INSTRUCTIONS**

Wear structural fire fighting gear. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

FLAMMABLE PROPERTIES

	Typical	Minimum	Maximum	Test Result	Units	Method
Flash Point				170 - 220	F	PMCC
Autoignition Temperature				750 estimated	F	N/A
Lower Explosion Limit				no data	%	N/A
Upper Explosion Limit				no data	%	N/A

6. ACCIDENTAL RELEASE MEASURES

Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Use appropriate personal protective equipment as stated in Section 8 of this MSDS. Advise the Environmental Protection Agency (EPA) and appropriate state agencies, if required. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Vacuum or sweep up material and place in a disposal container.

7. HANDLING AND STORAGE

- **HANDLING**

Use only in a well-ventilated area. Avoid breathing (dust, vapor, mist, gas). Avoid contact with eyes. Avoid contact with this material. Wash thoroughly after handling.

- **STORAGE**

Keep container closed when not in use. NFPA class IIIA storage. Flash point is greater than 140 degrees F and less than 200 degrees F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Consult With a Health and Safety Professional for Specific Selections

- **ENGINEERING CONTROLS**

Ventilation is normally required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. See Section 15 for additional ventilation information.

- **PERSONAL PROTECTION**

- **EYE PROTECTION**

Splash proof chemical goggles are recommended to protect against the splash of product.

- **GLOVES or HAND PROTECTION**

Protective gloves are recommended when prolonged skin contact cannot be avoided. The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection. Polyvinyl chloride (PVC); Neoprene; Nitrile; Polyvinyl alcohol; Viton; Polyurethane;

- **RESPIRATORY PROTECTION**

Concentration in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment. Respiratory protection is not usually needed unless product is heated or misted.. Half-mask air purifying respirator with combination organic vapor and HEPA filter cartridges is acceptable for exposures to ten (10) times the exposure limit. Full-face air purifying respirator with combination organic vapor and HEPA filter cartridges is acceptable for exposures to fifty (50) times the exposure limit. If hydrogen sulfide (H₂S) is present, full-face supplied air respirator with escape bottle or SCBA is required.

▪ **OTHER**

Where splashing is possible, full chemically resistant protective clothing and boots are required. The following materials are acceptable for use as protective clothing: Polyvinyl alcohol (PVA); Polyvinyl chloride (PVC); Neoprene; Nitrile; Polyurethane; For non-fire emergencies, respiratory protection may be necessary and wear appropriate protective clothing to avoid contact with material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Property	Typical	Units	Text Result	Reference
Appearance		other	dark thick liq.	
Boiling Point		F	no data	
Bulk Density		lb/gal	no data	
Melting Point		F	no data	
Molecular Weight		g/mole	no data	
Octanol/Water Coefficient		other	no data	
pH		other	no data	
Specific Gravity		other	1.06	
Solubility In Water		wt %	nil	
Odor		other	distinct odor	
Odor Threshold		other	no data	
Vapor Pressure		mmHg	nil	
Viscosity (F)		other	no data	
Viscosity (C)		other	no data	
% Volatile		wt %	nil	

10. STABILITY AND REACTIVITY

- **STABILITY**

Stable

- **CONDITIONS TO AVOID**

Avoid heat, sparks and open flame.

- **INCOMPATIBILITY**

The following materials are incompatible with this product: Strong oxidizers

- **HAZARDOUS DECOMPOSITION PRODUCTS**

Combustion may produce carbon monoxide, carbon dioxide and other asphyxiants.

- **HAZARDOUS POLYMERIZATION**

Will not polymerize.

11. ECOLOGICAL INFORMATION

No data available

12. DISPOSAL CONSIDERATIONS

Follow federal, state and local regulations. Do not flush material to drain or storm sewer. Contract to authorized disposal service.

13. TRANSPORT INFORMATION

Governing Body Mode

Proper Shipping Name

DOT	Ground	Combustible Liquid, N.O.S.		
<u>Governing Body</u>	<u>Mode</u>	<u>Hazard Class</u>	<u>UN/NA No.</u>	<u>Label</u>
DOT	Ground	3 (Combustible Liquid)	NA1993	Combustible Liquid

14. REGULATORY INFORMATION

Regulatory List	Component	CAS No.
CWA (Clean Water Act) - Toxic Pollutants	POLYNUCLEAR AROMATIC HYDROCARBONS	RR-00450-2
Inventory - Australia (AICS)	CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4
Inventory - Australia (AICS)	SULFUR	7704-34-9
Inventory - Canada - Domestic Substances List	CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4
Inventory - Canada - Domestic Substances List	SULFUR	7704-34-9
Inventory - China	CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4
Inventory - China	SULFUR	7704-34-9
Inventory - European EINECS Inventory	CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4
Inventory - European EINECS Inventory	SULFUR	7704-34-9
Inventory - Korea - Existing and Evaluated	CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4
Inventory - Korea - Existing and Evaluated	SULFUR	7704-34-9
Inventory - Philippines Inventory (PICCS)	SULFUR	7704-34-9
Inventory - TSCA - Sect. 8(b) Inventory	CLARIFIED OILS(PETROLEUM), CAT. CRACKED	64741-62-4
Inventory - TSCA - Sect. 8(b) Inventory	SULFUR	7704-34-9
Massachusetts - Right To Know List	SULFUR	7704-34-9
New Jersey - Department of Health RTK List	POLYNUCLEAR AROMATIC HYDROCARBONS	RR-00450-2
New Jersey - Department of Health RTK List	SULFUR	7704-34-9
Pennsylvania - RTK (Right to Know) List	POLYNUCLEAR AROMATIC HYDROCARBONS	RR-00450-2
Pennsylvania - RTK (Right to Know) List	SULFUR	7704-34-9

Title III Classifications Sections 311,312:

- Acute: YES
- Chronic: YES
- Fire: YES
- Reactivity: NO
- Sudden Release of Pressure: NO

15. OTHER INFORMATION

ADDITIONAL TRANSPORTATION INFORMATION: The flash point for Clarified Slurry Oil ranges from 170 deg F (PMCC) to 220 deg F (PMCC). A flash point of less than 200 deg F requires that the material be classified as combustible. When the flash point of Clarified Slurry Oil is less than 200 deg F, the following DOT classification must

be used: Proper Shipping Name: Combustible Liquid, N.O.S. Hazard Class - 3 (combustible liquid) UN/NA ID No. NA1993 Packing Group III. When the flash point of Clarified Slurry Oil is 200 deg F or greater, the product is not regulated when shipped according to DOT. Warning! The International Agency for Research on Cancer classifies this type of petroleum oil as carcinogenic. Prolonged and repeated lifetime skin contact with similar oils has produced skin tumors in laboratory animals. Oral and skin exposure to similar oils has produced toxic liver, thymus, bone marrow, blood (anemia) effects and death in laboratory animals. Oral and skin exposure of pregnant animals to similar oils has injured or been lethal to the unborn. Avoid contact with skin. If contact is unavoidable, wear oil-impervious protective gear. In case of skin contact, promptly wash thoroughly with soap and water. Clothing soaked with this oil should be removed and laundered before reuse. Oil-soaked shoes should be destroyed. Minimize exposure to mist. Wear approved respiratory protection if average airborne mist exposure exceeds Sunoco's Recommended Occupational Exposure Limit of 0.2 milligrams per cubic meter of air for an 8-hour Time Weighted Average for Polynuclear Aromatic Hydrocarbons. WHMIS Classification: Class D Division 2A. NOTE TO PHYSICIAN: Following injection, prompt debridement of the wound is necessary to minimize necrosis and tissue loss. The vapor space of drums or tank cars may contain hydrogen sulfide (H₂S) gas. The container should be carefully vented in a well-ventilated area away from people in order to dissipate this toxic and flammable head. Wear appropriate respiratory protection.

GRACE Davison

W. R. GRACE & Co.-Conn.

7500 Grace Drive

Columbia, Maryland 21044

(410) 531-4000

Material No. 5108103

MATERIAL SAFETY DATA SHEET

SAFETY DATA

PRODUCT: FCC-AURORA-RFG140ILLI

DATE: January 13, 2003

Emergency Contact:

Telephone Numbers: Transportation Emergency (24 hr)
Other Emergencies (24 hr)
Health and Safety Information (9 AM to 5 PM - EST)

Chemtrec 1-800-424-9300
1-410-531-4000
1-410-531-4764

The following information includes safety data required by OSHA. The recipient of this safety data is responsible for passing the safety information on so that it reaches the ultimate user who may come in contact with the material.

TRADE NAME: Fluid Cracking Catalyst

CHEMICAL NAME
& FAMILY: Silica Alumina (Zeolitic) Catalyst

SYNONYMS: Zeolitic Silica, Alumina Catalyst, Gel or Sol Catalyst

CHEMICAL NOTATION
OR STRUCTURE: $x\text{SiO}_2 \cdot y\text{Al}_2\text{O}_3 \cdot z\text{H}_2\text{O} \cdot m\text{Na}_2\text{O} \cdot n\text{RE}_2\text{O}_3$

INGREDIENTS:

	SiO ₂ ** Silica (Synthetic)	Al ₂ O ₃ Alumina	SiO ₂ Silica Gel	Quartz	SO ₂ Sulfate	RE ₂ O ₃ Rare Earths	TiO ₂ Titania	Na ₂ O Sodium Oxide
OSHA: PEL mg/m ³ total respirable	6	10 5	6	Total Dust: 30 mg/m ³ ± (%SiO ₂ +2) Respirable Fraction: 0.1 mg/m ³	n.l.	n.l.	n.l.	n.l.
ACGIH: TLV mg/m ³ total respirable	10	10	10	Respirable Fraction: 0.1 mg/m ³	n.l.	n.l.	10	n.l.
CAS REGISTRY NO:	7631-86-9	1344-28-1	63231-67-4(old) 132926-00-8(new)	14808-60-7	n.l.	68184-83-0	13463-67-7	1313-59-3
RTCS NO:	VV7322000	BK1200000	VV7322000	VV7330000	n.l.	VV7328000	XR2275000	WC4800000

n.l. = not listed ** Should not be confused with quartz, cristobalite, or tridymite.

The information contained herein is based upon data considered true and accurate. However, Grace makes no warranties, express or implied, as to the accuracy or adequacy of the information contained herein or the results to be obtained from the use thereof. This information is offered solely for the user's consideration, investigation and verification. Since the use and conditions of use of this information and the material described herein are not within the control of Grace, Grace assumes no responsibility for injury to the user or third persons. The material described herein is sold only pursuant to Grace's Terms and Conditions of Sale, including those limiting warranties and remedies contained therein. It is the responsibility of the user to determine whether any use of this data and information is in accordance with applicable federal, state or local laws and regulations.

HEALTH INFORMATION

PRECAUTION IN USE:

Prevent dusty conditions that would cause personnel to be exposed to high concentrations of dust.

Workplace dust levels should be kept below the OSHA PEL's and ACGIH TLV's given in Ingredients, page 1. If concentrations exceed these levels, a properly fitted, NIOSH approved respirator and goggles should be worn.

Prolonged contact with catalyst dust may cause drying irritation of the skin. Longsleeve shirt and gloves with tight fitting wristlets should be used to reduce skin exposure. See SPECIAL INFORMATION, page 4.

FIRST AID:

EYES: Immediately wash the eyes with large amounts of water, occasionally lifting upper & lower lids. If irritation occurs and persists, seek medical attention.

SKIN: Wash area with soap and water. Personnel should shower after handling this material if frequent contact with dust is experienced.

INHALATION: If inhalation causes irritation or discomfort, remove person from exposure and seek medical help if symptoms do not disappear.

INGESTION: If ingested, drink 2 glasses of water and consult a physician.

TOXICOLOGY

ANIMAL TOXICOLOGY:

TESTS FOR DOT HAZARD CLASSIFICATION:

Not classified as a hazardous material.

Test results for a similar Davison Fluid Cracking Catalyst were:

- 48-hour oral LD₅₀ (rat): greater than 31,600 mg/kg
 - 48-hour dermal LD₅₀ (rabbit): greater than 2,000 mg/kg
- Not considered an ocular irritant.

TESTS FOR FDA APPROVAL FOR USE IN FOODS:

Not a food-grade product.

HUMAN TOXICOLOGY:

No known hazards in normal usage. With regard to employee exposure to FCC dust, there has been no indication of an incidence of lung problems higher than the background for the population-at-large for employees in our FCC production facilities. Davison has produced Amorphous Grades since 1942, Zeolitic, Non-Promoted Grades since 1964, and Zeolitic Promoted Grades since 1977. The maximum concentration of quartz for all grades is 1.0%. The most recent IARC classification of crystalline silica (quartz) is that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1). Quartz can cause silicosis or other fibrotic lung disease with prolonged exposure. Davison knows of no medical conditions abnormally aggravated by exposure to this product. The primary route of entry is inhalation.

ENVIRONMENTAL DATA

Product is not known to have any adverse effect on the aquatic environment. However, waste or contaminated material should be placed where it can not be washed into streams or waterways. See SPECIAL INFORMATION, page 4.

TYPICAL CHEMICAL & PHYSICAL INFORMATION

APPEARANCE: Off-white fine powder (microspheroides)

pH IN 5% SLURRY: 3-6

ODOR: None

SPECIFIC GRAVITY: Approximately 2.1

BULK DENSITY: .45 grams/cc to 1.00 grams/cc depending on grade.

SOLUBILITY
IN WATER: Nil.

APPROXIMATE
ANALYSIS:

	Wt. %
Alumina Al_2O_3	20-60
Silica SiO_2	40-80
Rare Earths RE_2O_3	0-10
Sulfate SO_4	0.1-2.5
Sodium Oxide Na_2O	0-1.0
Titania TiO_2	0-1.0
Total Volatiles	2-16
Quartz SiO_2	max. 1.0

STABILITY: Stable

REACTIVITY: Reacts with HF, otherwise inert.

FIRE & EXPLOSION
DATA: Non-flammable will not explode.

REGULATORY STATUS

OSHA-	See Ingredients, page 1.
TSCA-	The component(s) of this product is/are listed on the Toxic Substances Control Act (TSCA) Inventory of Existing Chemicals. EPA has defined zeolites as complex chemical products consisting of silica (SiO_2) and alumina (Al_2O_3), in various proportions plus metallic oxides and certain cations. For purposes of TSCA, zeolites are statutory mixtures.
EPA-	This product contains no toxic chemicals in excess of the applicable de minimis concentration as specified under § 313 of Title III SARA.
ACGIH-	See Ingredients, page 1.
USDA-	Not applicable.
FDA-	Not applicable.
DOT-	Not classified as a hazardous material.

HANDLING INFORMATION

STORAGE AND TRANSPORTATION:	No special requirements.
DISPOSAL:	Fresh catalyst is non-hazardous. Landfill in accordance with state, local and federal regulations. Cover disposed material promptly to avoid dusty conditions. See SPECIAL INFORMATION, below.
SPILLAGE AND CLEANUP:	Fresh Catalyst should be swept up or washed to a sewer system that is treated to remove solids.
CONTAINERS:	Drums, bins, truck hoppers or hopper cars depending on requirements. Follow standard operating procedure when using pneumatic transfer into process.

SPECIAL INFORMATION

This Material Safety Data Sheet provides information applicable to the catalyst as shipped. Safe handling and proper disposal of spent catalyst may require special precautions and additional requirements due to the presence of heavy metals picked up in the FCC unit. Contact the Davison representatives if you desire such information.



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Sunoco, Inc.
100 Green Street
Marcus Hook PA 19061

October 06, 2011

Project: Marcus Hook Sampling

Submittal Date: 09/29/2011
Group Number: 1269018
PO Number: 11-MT0660
Release Number: 11-000084-000
State of Sample Origin: PA

Client Sample Description

Tank 5 Bottom Solids (CSO) Grab Sample
Tank 5 Bottom Solids (CSO) Grab Sample

Lancaster Labs (LLI)

6423317
6423318

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Sunoco, Inc.

Attn: Ron Rosendorn

Questions? Contact your Client Services Representative
Loran A Carter at (717) 656-2300 Ext. 1375

Respectfully Submitted,

Chad A. Moline
Group Leader



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Sample Description: Tank 5 Bottom Solids (CSO) Grab Sample
Marcus Hook Sampling

LLI Sample # SW 6423317
LLI Group # 1269018
Account # 09431

Project Name: Marcus Hook Sampling

Collected: 09/22/2011 10:00 by RR

Sunoco, Inc.
100 Green Street
Marcus Hook PA 19061

Submitted: 09/29/2011 17:45

Reported: 10/06/2011 16:56

SBSAR

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/kg	ug/kg	
10950	Acetone	67-64-1	< 2,500	2,500	114.7
10950	Benzene	71-43-2	3,800	630	114.7
10950	Bromodichloromethane	75-27-4	< 630	630	114.7
10950	Bromoform	75-25-2	< 630	630	114.7
10950	Bromomethane	74-83-9	< 630	630	114.7
10950	2-Butanone	78-93-3	< 1,300	1,300	114.7
10950	Carbon Disulfide	75-15-0	< 630	630	114.7
10950	Carbon Tetrachloride	56-23-5	< 630	630	114.7
10950	Chlorobenzene	108-90-7	< 630	630	114.7
10950	Chloroethane	75-00-3	< 630	630	114.7
10950	Chloroform	67-66-3	< 630	630	114.7
10950	Chloromethane	74-87-3	< 630	630	114.7
10950	Cyclohexane	110-82-7	< 630	630	114.7
10950	1,2-Dibromo-3-chloropropane	96-12-8	< 630	630	114.7
10950	Dibromochloromethane	124-48-1	< 630	630	114.7
10950	1,2-Dibromoethane	106-93-4	< 630	630	114.7
10950	1,2-Dichlorobenzene	95-50-1	< 630	630	114.7
10950	1,3-Dichlorobenzene	541-73-1	< 630	630	114.7
10950	1,4-Dichlorobenzene	106-46-7	< 630	630	114.7
10950	Dichlorodifluoromethane	75-71-8	< 630	630	114.7
10950	1,1-Dichloroethane	75-34-3	< 630	630	114.7
10950	1,2-Dichloroethane	107-06-2	< 630	630	114.7
10950	1,1-Dichloroethene	75-35-4	< 630	630	114.7
10950	cis-1,2-Dichloroethene	156-59-2	< 630	630	114.7
10950	trans-1,2-Dichloroethene	156-60-5	< 630	630	114.7
10950	1,2-Dichloropropane	78-87-5	< 630	630	114.7
10950	cis-1,3-Dichloropropene	10061-01-5	< 630	630	114.7
10950	trans-1,3-Dichloropropene	10061-02-6	< 630	630	114.7
10950	Ethylbenzene	100-41-4	15,000	630	114.7
10950	Freon 113	76-13-1	< 1,300	1,300	114.7
10950	2-Hexanone	591-78-6	< 1,300	1,300	114.7
10950	Isopropylbenzene	98-82-8	1,100	630	114.7
10950	Methyl Acetate	79-20-9	< 630	630	114.7
10950	Methyl Tertiary Butyl Ether	1634-04-4	< 630	630	114.7
10950	4-Methyl-2-pentanone	108-10-1	< 1,300	1,300	114.7
10950	Methylcyclohexane	108-87-2	4,500	630	114.7
10950	Methylene Chloride	75-09-2	< 630	630	114.7
10950	Styrene	100-42-5	< 630	630	114.7
10950	1,1,2,2-Tetrachloroethane	79-34-5	< 630	630	114.7
10950	Tetrachloroethene	127-18-4	< 630	630	114.7
10950	Toluene	108-88-3	13,000	630	114.7
10950	1,2,4-Trichlorobenzene	120-82-1	< 630	630	114.7
10950	1,1,1-Trichloroethane	71-55-6	< 630	630	114.7
10950	1,1,2-Trichloroethane	79-00-5	< 630	630	114.7
10950	Trichloroethene	79-01-6	< 630	630	114.7
10950	Trichlorofluoromethane	75-69-4	< 630	630	114.7
10950	Vinyl Chloride	75-01-4	< 630	630	114.7
10950	Xylene (Total)	1330-20-7	88,000	630	114.7
GC/MS	Semivolatiles	SW-846 8270C	ug/kg	ug/kg	
10724	Acenaphthene	83-32-9	38,000	18,000	100



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 2 of 4

Sample Description: Tank 5 Bottom Solids (CSO) Grab Sample
Marcus Hook Sampling

LLI Sample # SW 6423317
LLI Group # 1269018
Account # 09431

Project Name: Marcus Hook Sampling

Collected: 09/22/2011 10:00 by RR

Sunoco, Inc.

Submitted: 09/29/2011 17:45

100 Green Street

Reported: 10/06/2011 16:56

Marcus Hook PA 19061

SBSAR

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C	ug/kg	ug/kg	
10724	Acenaphthylene	208-96-8	< 18,000	18,000	100
10724	Anthracene	120-12-7	62,000	18,000	100
10724	Benzo(a)anthracene	56-55-3	280,000	18,000	100
10724	Benzo(a)pyrene	50-32-8	140,000	18,000	100
10724	Benzo(b)fluoranthene	205-99-2	64,000	18,000	100
10724	Benzo(g,h,i)perylene	191-24-2	43,000	18,000	100
10724	Benzo(k)fluoranthene	207-08-9	21,000	18,000	100
10724	Chrysene	218-01-9	330,000	18,000	100
10724	Dibenz(a,h)anthracene	53-70-3	21,000	18,000	100
10724	Fluoranthene	206-44-0	59,000	18,000	100
10724	Fluorene	86-73-7	55,000	18,000	100
10724	Indeno(1,2,3-cd)pyrene	193-39-5	< 18,000	18,000	100
10724	Naphthalene	91-20-3	99,000	18,000	100
10724	Phenanthrene	85-01-8	320,000	18,000	100
10724	Pyrene	129-00-0	360,000	18,000	100
Metals		SW-846 7471A	mg/kg	mg/kg	
00159	Mercury	7439-97-6	< 0.107	0.107	1
Wet Chemistry		SW-846 9012A modified	mg/kg	mg/kg	
01123	Cyanide (Reactivity)	n.a.	< 58.2	58.2	1
		40 CFR 261.21			
00542	Ignitability	n.a.	See Below		1
	The sample did not spontaneously ignite when exposed to air or water. The sample did not ignite by friction. The sample vapors did not ignite when exposed to a flame using a closed cup apparatus.				
		SW-846 9034	mg/kg	mg/kg	
01122	Sulfide (Reactivity)	n.a.	< 160	160	1
		SW-846 9045C modified	Std. Units	Std. Units	
00394	pH in soil	n.a.	6.94	0.0100	1
		SW-846 Chapter 7.3	see below	see below	
01121	Reactivity	n.a.	See Below		1



Analysis Report

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Page 3 of 4

Sample Description: Tank 5 Bottom Solids (CSO) Grab Sample
Marcus Hook Sampling

LLI Sample # SW 6423317
LLI Group # 1269018
Account # 09431

Project Name: Marcus Hook Sampling

Collected: 09/22/2011 10:00 by RR

Sunoco, Inc.
100 Green Street
Marcus Hook PA 19061

Submitted: 09/29/2011 17:45

Reported: 10/06/2011 16:56

SBSAR

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	SW-846 Chapter 7.3		see below	see below	

Reactivity:

This sample was extracted and analyzed by the interim method described in SW-846 Revision 3, December 1996 - Chapter 7.3. The Interim Guidance for Reactive Cyanide and Reactive Sulfide (SW-846 Sections 7.3.3 and 7.3.4 of Chapter 7 - December 1996) identifies a reactive material as generating more than 250 mg/kg of hydrogen cyanide or 500 mg/kg of hydrogen sulfide. This waste is not considered hazardous due to reactivity based on that standard. These results do not reflect total cyanide or total sulfide. On July 14, 2005, EPA published a rule in the Federal Register that removed the Interim Guidance and the method referenced above. At this time there is no specific guidance or a method to be used to evaluate "Reactivity".

Wet Chemistry	SM20 2540 G	%	%	
00111 Moisture	n.a.	8.8	0.50	1
"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.				

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10950	VOCs TCL (4.3) 8260 Soil	SW-846 8260B	1	Q112781AA	10/05/2011 14:29	Kerri E Legerlotz	114.7
00374	GC/MS - Low Level Bulk Prep	SW-846 5035A Modified	1	201127225698	09/29/2011 23:34	Scott W Freisher	n.a.
00374	GC/MS - Low Level Bulk Prep	SW-846 5035A Modified	2	201127225698	09/29/2011 23:34	Scott W Freisher	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5035A Modified	1	201127225698	09/29/2011 23:18	Scott W Freisher	n.a.
10724	PAH 8270 (microwave)	SW-846 8270C	1	11277SLB026	10/06/2011 11:09	Florida A Cimino	100
10814	BNA Soil Microwave PAH	SW-846 3546	1	11277SLB026	10/05/2011 02:15	Sherry L Morrow	1
00159	Mercury	SW-846 7471A	1	112785711001	10/06/2011 08:18	Damary Valentin	1
05711	SW SW846 Hg Digest	SW-846 7471A modified	1	112785711001	10/06/2011 02:00	Annamaria Stipkovits	1
01123	Cyanide (Reactivity)	SW-846 9012A modified	1	11278104201A	10/05/2011 19:56	Joseph E McKenzie	1
00542	Ignitability	40 CFR 261.21	1	11278054201A	10/05/2011 00:15	Daniel S Smith	1
01122	Sulfide (Reactivity)	SW-846 9034	1	11278112101A	10/05/2011 08:45	Susan E Hibner	1
00394	pH in soil	SW-846 9045C modified	1	11279039402A	10/06/2011 12:45	Michelle L Lalli	1
01121	Reactivity	SW-846 Chapter 7.3	1	11278112101A	10/05/2011 08:45	Susan E Hibner	1



Analysis Report

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Page 4 of 4

Sample Description: Tank 5 Bottom Solids (CSO) Grab Sample
Marcus Hook Sampling

LLI Sample # SW 6423317
LLI Group # 1269018
Account # 09431

Project Name: Marcus Hook Sampling

Collected: 09/22/2011 10:00 by RR

Sunoco, Inc.

100 Green Street

Submitted: 09/29/2011 17:45

Marcus Hook PA 19061

Reported: 10/06/2011 16:56

5BSAR

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	11273820005B	09/30/2011 19:56	Scott W Freisher	1



Analysis Report

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Page 1 of 1

Sample Description: Tank 5 Bottom Solids (CSO) Grab Sample
TCLP NON-VOLATILE EXTRACTION
Marcus Hook Sampling

LLI Sample # TL 6423318
LLI Group # 1269018
Account # 09431

Project Name: Marcus Hook Sampling

Collected: 09/23/2011 10:00 by RR

Sunoco, Inc.
100 Green Street
Marcus Hook PA 19061

Submitted: 09/29/2011 17:45

Reported: 10/06/2011 16:56

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
Metals					
		SW-846 6010B	mg/l	mg/l	
07035	Arsenic	7440-38-2	0.0772	0.0200	1
07046	Barium	7440-39-3	0.223	0.0050	1
07049	Cadmium	7440-43-9	< 0.0050	0.0050	1
07051	Chromium	7440-47-3	< 0.0150	0.0150	1
07055	Lead	7439-92-1	< 0.0150	0.0150	1
07036	Selenium	7782-49-2	< 0.0200	0.0200	1
07066	Silver	7440-22-4	< 0.0050	0.0050	1
		SW-846 7470A	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00065	0.00020	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/12

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	112775705002	10/04/2011 22:21	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	112775705002	10/04/2011 22:21	John W Yanzuk II	1
07049	Cadmium	SW-846 6010B	1	112775705002	10/04/2011 22:21	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	112775705002	10/04/2011 22:21	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	112775705002	10/06/2011 10:14	Eric L Eby	1
07036	Selenium	SW-846 6010B	1	112775705002	10/04/2011 22:21	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	112775705002	10/04/2011 22:21	John W Yanzuk II	1
00259	Mercury	SW-846 7470A	1	112775713002	10/05/2011 08:38	Damary Valentin	1
05705	WW/TL SW 846 ICP Digest (tot)	SW-846 3010A	1	112775705002	10/04/2011 12:47	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	112775713002	10/04/2011 18:20	Nelli S Markaryan	1
00947	TCLP Non-volatile Extraction	SW-846 1311	1	11276-482-0947B	10/03/2011 15:30	Darin P Wagner	n.a.

Quality Control Summary

Client Name: Sunoco, Inc.
Reported: 10/06/11 at 04:56 PM

Group Number: 1269018

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Q112781AA	Sample number(s): 6423317							
Acetone	< 1,000	1,000.	ug/kg	58	65	32-209	11	30
Benzene	< 250	250.	ug/kg	93	96	80-120	4	30
Bromodichloromethane	< 250	250.	ug/kg	87	92	78-120	5	30
Bromoform	< 250	250.	ug/kg	97	105	70-120	7	30
Bromomethane	< 250	250.	ug/kg	127	135	32-162	7	30
2-Butanone	< 500	500.	ug/kg	60	63	46-153	4	30
Carbon Disulfide	< 250	250.	ug/kg	88	95	67-122	8	30
Carbon Tetrachloride	< 250	250.	ug/kg	90	96	69-122	6	30
Chlorobenzene	< 250	250.	ug/kg	104	112	80-120	7	30
Chloroethane	< 250	250.	ug/kg	121	130	37-154	7	30
Chloroform	< 250	250.	ug/kg	93	97	80-120	4	30
Chloromethane	< 250	250.	ug/kg	87	91	54-132	4	30
Cyclohexane	< 250	250.	ug/kg	75	83	62-121	9	30
1,2-Dibromo-3-chloropropane	< 250	250.	ug/kg	92	97	58-120	6	30
Dibromochloromethane	< 250	250.	ug/kg	105	109	77-120	3	30
1,2-Dibromoethane	< 250	250.	ug/kg	107	112	80-120	5	30
1,2-Dichlorobenzene	< 250	250.	ug/kg	104	108	79-120	5	30
1,3-Dichlorobenzene	< 250	250.	ug/kg	102	106	78-120	4	30
1,4-Dichlorobenzene	< 250	250.	ug/kg	104	108	79-120	4	30
Dichlorodifluoromethane	< 250	250.	ug/kg	77	86	20-120	11	30
1,1-Dichloroethane	< 250	250.	ug/kg	92	96	80-120	5	30
1,2-Dichloroethane	< 250	250.	ug/kg	94	98	71-129	4	30
1,1-Dichloroethene	< 250	250.	ug/kg	97	107	73-123	9	30
cis-1,2-Dichloroethene	< 250	250.	ug/kg	91	98	80-120	7	30
trans-1,2-Dichloroethene	< 250	250.	ug/kg	94	100	79-120	6	30
1,2-Dichloropropane	< 250	250.	ug/kg	84	89	80-120	5	30
cis-1,3-Dichloropropene	< 250	250.	ug/kg	86	91	80-120	5	30
trans-1,3-Dichloropropene	< 250	250.	ug/kg	98	104	77-120	6	30
Ethylbenzene	< 250	250.	ug/kg	99	105	80-120	6	30
Freon 113	< 500	500.	ug/kg	90	97	61-126	7	30
2-Hexanone	< 500	500.	ug/kg	80	86	45-155	7	30
Isopropylbenzene	< 250	250.	ug/kg	97	103	76-120	6	30
Methyl Acetate	< 250	250.	ug/kg	89	91	61-152	3	30
Methyl Tertiary Butyl Ether	< 250	250.	ug/kg	91	95	74-121	4	30
4-Methyl-2-pentanone	< 500	500.	ug/kg	81	83	61-134	2	30
Methylcyclohexane	< 250	250.	ug/kg	75	82	57-138	9	30
Methylene Chloride	< 250	250.	ug/kg	97	100	76-124	3	30
Styrene	< 250	250.	ug/kg	99	105	76-120	6	30
1,1,2,2-Tetrachloroethane	< 250	250.	ug/kg	98	102	71-123	4	30
Tetrachloroethene	< 250	250.	ug/kg	104	110	77-120	5	30
Toluene	< 250	250.	ug/kg	104	110	80-120	6	30
1,2,4-Trichlorobenzene	< 250	250.	ug/kg	87	94	68-120	8	30
1,1,1-Trichloroethane	< 250	250.	ug/kg	90	97	71-125	8	30
1,1,2-Trichloroethane	< 250	250.	ug/kg	103	107	80-120	4	30
Trichloroethene	< 250	250.	ug/kg	88	95	80-120	7	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco, Inc.

Group Number: 1269018

Reported: 10/06/11 at 04:56 PM

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Trichlorofluoromethane	< 250	250.	ug/kg	85	101	58-133	18	30
Vinyl Chloride	< 250	250.	ug/kg	87	95	53-120	8	30
Xylene (Total)	< 250	250.	ug/kg	100	108	80-120	7	30

Batch number: 11277SLB026

Sample number(s): 6423317

Acenaphthene	< 17	17.	ug/kg	98		83-111
Acenaphthylene	< 17	17.	ug/kg	108		68-120
Anthracene	< 17	17.	ug/kg	102		83-111
Benzo(a)anthracene	< 17	17.	ug/kg	104		82-111
Benzo(a)pyrene	< 17	17.	ug/kg	98		63-138
Benzo(b)fluoranthene	< 17	17.	ug/kg	93		61-133
Benzo(g,h,i)perylene	< 17	17.	ug/kg	98		63-130
Benzo(k)fluoranthene	< 17	17.	ug/kg	106		71-135
Chrysene	< 17	17.	ug/kg	99		81-111
Dibenz(a,h)anthracene	< 17	17.	ug/kg	102		67-129
Fluoranthene	< 17	17.	ug/kg	104		80-113
Fluorene	< 17	17.	ug/kg	100		81-117
Indeno(1,2,3-cd)pyrene	< 17	17.	ug/kg	100		64-128
Naphthalene	< 17	17.	ug/kg	93		83-112
Phenanthrene	< 17	17.	ug/kg	98		83-109
Pyrene	< 17	17.	ug/kg	100		80-121

Batch number: 112775705002

Sample number(s): 6423318

Arsenic	< 0.0200	0.0200	mg/l	115		89-115
Barium	< 0.0050	0.0050	mg/l	95		90-110
Cadmium	< 0.0050	0.0050	mg/l	101		90-112
Chromium	< 0.0150	0.0150	mg/l	108		90-110
Lead	< 0.0150	0.0150	mg/l	95		88-110
Selenium	< 0.0200	0.0200	mg/l	117		80-120
Silver	< 0.0050	0.0050	mg/l	108		83-120

Batch number: 112775713002

Sample number(s): 6423318

Mercury	< 0.00020	0.00020	mg/l	97		80-120
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Batch number: 112785711001

Sample number(s): 6423317

Mercury	< 0.0990	0.0990	mg/kg	103		82-118
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Batch number: 11278104201A

Sample number(s): 6423317

Cyanide (Reactivity)	< 60.0	60.0	mg/kg	84		77-113
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Batch number: 11278112101A

Sample number(s): 6423317

Sulfide (Reactivity)	< 160	160.	mg/kg	84		69-102
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Batch number: 11279039402A

Sample number(s): 6423317

pH in soil				100		99-101
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Batch number: 11273820005B

Sample number(s): 6423317

Moisture				100		99-101
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Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

MS MSD MS/MSD RPD BKG DUP DUP Dup RPD

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco, Inc.

Group Number: 1269018

Reported: 10/06/11 at 04:56 PM

Analysis Name	%REC	%REC	Limits	RPD	MAX	Conc	Conc	RPD	Max
Batch number: 112775LB026 Sample number(s): 6423317 UNSPK: P423315									
Acenaphthene	378 (2)	785 (2)	41-135	7	30				
Acenaphthylene	155 (2)	214 (2)	47-137	5	30				
Anthracene	811 (2)	574 (2)	40-147	7	30				
Benzo(a)anthracene	210 (2)	297 (2)	32-150	5	30				
Benzo(a)pyrene	-224 (2)	183 (2)	57-129	43*	30				
Benzo(b)fluoranthene	54	199*	53-131	28	30				
Benzo(g,h,i)perylene	99	194*	60-123	18	30				
Benzo(k)fluoranthene	154*	182*	61-131	15	30				
Chrysene	219 (2)	465 (2)	76-114	8	30				
Dibenz(a,h)anthracene	50	90	37-151	14	30				
Fluoranthene	256 (2)	314 (2)	48-122	5	30				
Fluorene	588 (2)	824 (2)	35-140	4	30				
Indeno(1,2,3-cd)pyrene	271*	327*	61-123	18	30				
Naphthalene	692 (2)	3397 (2)	25-149	14	30				
Phenanthrene	1074 (2)	2626 (2)	34-147	8	30				
Pyrene	214 (2)	502 (2)	76-124	7	30				
Batch number: 112775705002 Sample number(s): 6423318 UNSPK: P422800 BKG: P422800									
Arsenic	98	100	75-125	2	20	< 0.0200	< 0.0200	0 (1)	20
Barium	90	88	75-125	2	20	0.371	0.381	3	20
Cadmium	85	87	75-125	2	20	< 0.0050	< 0.0050	0 (1)	20
Chromium	89	91	75-125	3	20	< 0.0150	< 0.0150	200* (1)	20
Lead	87	85	75-125	2	20	< 0.0150	< 0.0150	0 (1)	20
Selenium	100	103	75-125	2	20	< 0.0200	< 0.0200	0 (1)	20
Silver	73*	83	75-125	14	20	< 0.0050	< 0.0050	0 (1)	20
Batch number: 112775713002 Sample number(s): 6423318 UNSPK: 6423318 BKG: 6423318									
Mercury	40*	44*	80-120	4	20	0.00065	< 0.00020	130* (1)	20
Batch number: 112785711001 Sample number(s): 6423317 UNSPK: P423315 BKG: P423315									
Mercury	47*	110	80-120	35*	20	0.162	0.289	56* (1)	20
Batch number: 11278104201A Sample number(s): 6423317 UNSPK: P426104									
Cyanide (Reactivity)	0	2	0-44	200*	11				
Batch number: 11278112101A Sample number(s): 6423317 UNSPK: P426104									
Sulfide (Reactivity)	58	85	10-123	37*	24				
Batch number: 11279039402A Sample number(s): 6423317 BKG: P429031									
pH in soil						9.05	9.07	0	3
Batch number: 11273820005B Sample number(s): 6423317 BKG: P423554									
Moisture						64.7	64.4	0	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs TCL (4.3) 8260 Soil
Batch number: Q112781AA

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco, Inc.

Group Number: 1269018

Reported: 10/06/11 at 04:56 PM

Surrogate Quality Control

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6423317	69*	66*	63*	61*
Blank	88	88	97	95
LCS	82	82	92	91
LCSD	88	87	99	99
Limits:	71-114	70-109	70-123	70-111
Analysis Name: PAH 8270 (microwave)				
Batch number: 1127781B026				
	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	
6423317	119	135*	375*	
Blank	93	94	92	
LCS	94	97	92	
MS	109	161*	105	
MSD	87	161*	97	
Limits:	45-123	56-121	43-124	

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

For Lancaster Laboratories use only
Acct. # 9431 Group# 1269018 Sample # 6423317-18

COC # 234748

Please print. Instructions on reverse side correspond with circled numbers.

For Lab Use Only

FSC: _____SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO₃ B=NaOH
S=H₂SO₄ O=Other

Remarks

Preservation Codes

WDA 8260 B

Total mercury	
semivolatile 8270 C	
TECP metals	
ignitability	
pH	
Reactivity 8275	

Client: Sunoco, Inc. Marcus Hook, PA Acct. #: _____
Project Name/#: _____ PWSID #: _____
Project Manager: _____ P.O.#: 11-MT0668
Sampler: Ron Rasendorn ^{Walt} 11-000084-000
Quote #: _____
Name of state where samples were collected: PA + NJ

[illegible]

7 Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed: 5 day
Rush results requested by (please circle): Phone Fax E-mail
Phone #: _____ Fax #: _____
E-mail address: rmrosen@comcast.com

8	Data Package Options (please circle if required)		SDG Complete?	
	Type I (validation/NJ Reg)	TX TRRP-13	Yes	No
	Type II (Tier II)	MA MCP CT RCP		
	Type III (Reduced NJ)	Site-specific QC (MS/MSD/Dup)?	Yes	No
	Type IV (CLP SOW)	(If yes, include QC sample and report volume.)		
Type VI (Raw Data Only)	Internal GOC Required?		Yes / No	

Relinquished by: <i>R. B. Borden</i>	Date <i>9/29/10</i>	Time <i>1305</i>	Received by: <i>[Signature]</i>	Date <i>9/29/10</i>	Time <i>1300</i>
Relinquished by: <i>[Signature]</i>	Date <i>9/29/10</i>	Time <i>1745</i>	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: <i>[Signature]</i>	Date <i>9/29/10</i>	Time <i>1745</i>

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 (717) 858-2300 Fax: (717) 858-8766
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	l	liter(s)
m3	cubic meter(s)	ul	microliter(s)
<	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
J	estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	B	Value is $<$ CRDL, but \geq IDL
B	Analyte was also detected in the blank	E	Estimated due to interference
C	Pesticide result confirmed by GC/MS	M	Duplicate Injection precision not met
D	Compound quantitated on a diluted sample	N	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	S	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	U	Compound was not detected
P	Concentration difference between primary and confirmation columns $>25\%$	W	Post digestion spike out of control limits
U	Compound was not detected	*	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

HERITAGE-WTI, INC.
1250 St. George Street
East Liverpool, Ohio 43920-3400
Phone: 330-385-7337
Fax: 330-385-7813
Web Site: www.heritage-wti.com

OHSAS 18001: 2007
ISO 14001: 2004
ISO 9001: 2008

October 31, 2011

Sunoco, Inc
100 Green Street
Marcus Hook, PA 19061

RE: Generator ID Number: PAD980550594
Waste Profile: 128991-3
Waste Name: CLARIFIED SLURRY OIL STORAGE

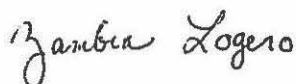
Dear Ron Rosendorn

HES-WTI is providing you this written notice in accordance with 40 CFR 264.12(b) and OAC 3745-54-12(B). Under these regulations, the owner and operator of a treatment, storage, and disposal facility (TSDF) that receives hazardous waste from an off-site generator must inform the generator, in writing, that they have the appropriate permits and will accept the waste that the generator is shipping.

Heritage coordinated the approval of wastestream 128991-3 into our facility. HES-WTI has the appropriate permits and will accept wastestream 128991-3.

This waste will be treated on-site at HES-WTI's East Liverpool, Ohio facility.

Sincerely,



Zambia Logero
Waste Approval Manager
Heritage



Recycled Paper